

## SEQUENCE LISTING

<110> FLINDERS TECHNOLOGIES PTY. LTD.

<120> A METHOD FOR PRODUCTIVITY IMPROVEMENT AND AGENTS USEFUL FOR SAME

<130> 12469560/TDO

<150> 60/485,241

<151> 2003-07-07

<160> 33

<170> PatentIn version 3.1

<210> 1

<211> 1158

<212> DNA

<213> actinomycete

<220>

<221> misc\_feature

<222> (1)..(1155)

<223> "n" is unknown nucleotide

<400> 1

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cggatacaac catttctcnc atgggatggt ggtggaaant ttttncggtt ggggatgggc	180
tcgcggccta tcaccttgtt ggtgggggtga tggcctacca aggcgacgaa cggtagcccg	240
cctgagaggg cgaccggcca cactgggact gagacaccgc ccgaactcct acgggaggca	300
gcactgggga atattgccca tgggcggaag cctgacgcag ngacgccgcg tgggggatga	360
cggccttngg gttgtaaacc tntttcagca gggacgaagt tgacgtgtac ctgtagaaga	420
agcgccggct aaatangtgc cagcagccgc ggtaatangt agggcgcgag cgttntccgg	480

- 2 -

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aattattggg cgtaaagagt ttgtaggtgg cttgttgogt ttgccgtgaa agcccgtggc 540
ttaantacgg gtttgcggtg gatacgggca ggctagaggc tggtaggggc aagcggaatt 600
cctgggtgtag cggtgaaatg cgcagatata aggaggaaca ccggtggcga aggcggcttg 660
ctggggccagt tctgacggtg aggagcgaaa gcgtggggag cgaacaggat tagataccct 720
ggtagtccac gctgtaaacg ttgggcgcta ggtgtggggg tcttccacga tctctgtgcc 780
gtagctaacg cattaagcgc cccgcctggg gagtacggcc gcaaggctaa aactcaaagg 840
aattgacggg ggcccgcaca agcggcgagg catgttgctt aattcgacgc aacgcgaaga 900
accttaccaa ggtttgacat acaccggaaa cactcanana tgggtgcctc ctttggaactg 960
gtgtacaggt ggtgcatggc tgtcnncacc ctogtgtcgt nagatgtngg gttaagtccc 1020
gcaacgancg caacccttgg ttccatgttg ccagcacncc ctttgnggtg gtggggacnc 1080
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ccttatgttc ttgnngtg 1158

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&lt;210&gt; 2

&lt;211&gt; 1437

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(1437)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 2

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ggggtctaata accggataac actnctgctc tcatgggcag gggttaaaag ctccggcggt 180
gaaggatgag cccgcggcct atcagcttgt tggtagagta atggctcacc aaggcgacga 240
cgggtagccg gcctgagagg gcgaccggcc acactgggac tgagacaagg ccagactcc 300
tacgggaggc agcagtgggg aatattgcaa caatgggcga aagcctgatg cagcgacgcc 360
gcgtgaggga tgacggcctt cgggttgtaa acctctttca gcagggaaga agcgaaagt 420
acggtacctg cagaagaagc gccggctaac tacgtgccag cagccgcggt aatacgtagg 480
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gtgtgaaagc	cgggggctta	accccgggtc	tgcattcgat	acgggctagc	tagagtgtgg	600
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gtggcgaagg	cggatctctg	ggccattact	gacgctgagg	agcgaaagcg	tggggagcga	720
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gagctgcgat	accgtgaggt	ggagcgcaatc	tcaaaaagcc	ggtctcagtt	cggattgggg	1260
tctgcaactc	gaccccatga	agtcggagtt	gctaataatc	gcanatcagc	attgctgcgg	1320
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$\langle 210 \rangle$  3

<211> 317

<212> DNA

<213> actinomycete

<220>

<221> misc feature

$\langle 222 \rangle$  (1) . . (311)

<223> "n" is unknown nucleotide

<400> 3

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actcggggtt	aagcccnag	ctttcacatc	cgacgtgaca	agccgcctac	aanctcttta	180
cgcccaataa	ttccgganaa	cgctcgcacc	ctacntntta	ccgcggctgc	tggcncgtnt	240
ttagccggtg	cttcttctgc	aggtaccgtc	actttcgctt	cttccttget	naaaaaggtt	300
tacaacccta	nggccgt					317

- 4 -

<210> 4  
 <211> 1048  
 <212> DNA  
 <213> actinomycete

<220>  
 <221> misc\_feature  
 <222> (1)..(1043)  
 <223> "n" is unknown nucleotide

<400> 4  
 tgagggatga cggcnttcgg ggttgtaaac nttntcacc agggaagaag cgaaagtgnc 60  
 ggtacctgca gaagaagcgc cgnctaacta cgggccagca tccgcggtaa tacgtagggc 120  
 gcaatcgttg tccggaatta ntgggcgtaa agagntcgta ggcggcttat cacgtcgggt 180  
 gtgaaagccc ggggcttaag ccccggtct gcattcgata cgggctagct agantntgnt 240  
 aggggagatc ggaattcctg gtgtagcggg gaaatgcgca gatatcagga ggaacaccgg 300  
 tggcgaaggc ggatctctgg gccattactg acgctgagga gcgaaagcgt ggggagcgaa 360  
 caggattaga taccctggta gtccacgcgc taaacggtgg gaactaggtg ttggcgacat 420  
 tccacgtcgt cgggtccgca gctaacgcat taagttcccc gcctggggag tacggccgca 480  
 aggctaaaac tcaaaggaat tgacgggggc ccgcacaagc agcggagcat gtggcttaat 540  
 tcgacgcaac gcgaagaacc ttaccaaggc ttgacataca ccggaaagca tcagagatgg 600  
 tgccccctt gtggtcggtg taacaggtgg gcatggctgt cgtcagctcg tgtcgtgaga 660  
 tgttgggtta agtcccgcaa cgagcgcaac ccttggttct gtgttgccag catgcccttc 720  
 ggggtgatgg ggactcacag gagaacgccg gggtaactc ggaggaaggt ggggacgacg 780  
 tcaagtcac atgcccccta tgtcttgggc tgcacacgtg ctacaatggc aggtaaatga 840  
 gctgcgatac cgtgaggtgg agcgaatctc aaaaaagcct gtctcanttc ggattggggg 900  
 ctgnaantcg accccatgaa agtcggagtt gctaattatc ccagatcaac attgctggcg 960  
 gtgaatacgt tcccggggcc ttggtaaaca ccgccgtca angtnaagaa agtcgggtaa 1020  
 caccggaaan ccggtgggac aanccct 1048

- 5 -

<210> 5  
 <211> 508  
 <212> DNA  
 <213> actinomycete

<220>  
 <221> misc\_feature  
 <222> (1)..(472)  
 <223> "n" is unknown nucleotide

<400> 5  
 ccgccttcgc caccgggtgt tcctcctgat atctgcgcgt ttcacgcgta caccaggaaa 60  
 ttccnatctc ccctaccaca ctctanctan ccggtatcga atgcaaaccg ggggttaanc 120  
 ccggggcttt cacacccgac ntgacaagcc gcctacaaac tctttacgcc caataattcc 180  
 ggacaaacgt tgcgccctac ntattaccgc ggctgctggc acntatttag ccggcgcttc 240  
 ttctgcaggt accgtcactt tcgcttcttc cctgctgaaa aagggtttaca acccgaaggc 300  
 cgtcatccct cacgcggcgt cgctgcatca ggctttcgcc cattgtgcaa tattccccac 360  
 tgctgcctcc cntaggaatc tgggccgtgt ctcaatccag tgtggccggt cccctctcng 420  
 gccggctacc gtcttcctt ggtnaccatt anctaccaa caactgatag gncgcgggct 480  
 catcttcacg cggaacttt caaccacc 508

<210> 6  
 <211> 1420  
 <212> DNA  
 <213> actinomycete

<400> 6  
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 aacgggtgag taacacgtgg gcaatctgcc cttcactctg ggacaagccc tggaaacggg 120  
 gtctaatacc ggatacgatt cgggaggcat ctcttggtac tggaaagctc cggcggtgaa 180  
 ggatgagccc gcgccctatc agcttggtgt gggtaatggc ctaccaaggc gacgacgggt 240  
 agccggcctg agagggcgac cggccacact gggactgaga cacggcccag actcctacgg 300  
 gaggcagcag tggggaatat tgcacaatgg gcgaaagcct gatgcagcga cgccgcgtga 360  
 gggatgacgg ccttcggggt gtaaacctct ttcagcaggg aagaagcgag agtgacggta 420

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cctgcagaag aagcgccggc taactacgtg ccagcagccg cggtaatacg tagggcgcaa      480
gcggttgccg gaattattgg gcgtaaagag ctcgtaggcg gcttgtcacg tcgggtgtga      540
aagcccgggg cttaaccccg ggtctgcac cgcacggggc aggctagagt gtggtagggg      600
agatcggaat tcctggtgta gcggtgaaat gcgcagatat caggaggaac accggtggcg      660
aaggcggatc tctgggccat tactgacgct gaggagcgaa agcgtgggga gccaacagga      720
ttagataccc tggtagtcca cgccgtaaac gttggaacta ggtgttggcg acattccacg      780
tcgtcggtgc cgcagctaac gcattaagtt cccgccttgg ggagtacggc cgcaaggcta      840
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caacgcgaag aaccttacca aggcttgaca tataccggaa agcgccagag atggtgcccc      960
ccttgtggtc ggtatacagg tggtgcatgg ctgtcgtcag ctcgtgtcgt gagatgttgg     1020
gttaagtccc gcaacgagcg caacccttgt cctgtgttgc cagcatgccc ttcgggggtga     1080
tggggactca caggagaccg ccgggggtcaa ctcggaggaa ggtggggacg acgtcaagtc     1140
atcatgcccc ttatgtcttg ggctgcacac gtgctacaat ggccggtaca aagagctgcg     1200
atgccgtgag gcggagcgaa totcaaaaag ccggtctcag ttcggattgg ggtctgcaac     1260
tcgaccccat gaagtcggag ttgctagtaa tcgcagatca gcattgctgc ggtgaatacg     1320
ttcccgggcc ttgtacacac cgcccgtcac gtcacgaaag tcggtaacac ccgaagccgg     1380
tggcccaacc cctcggggag ggagctgtcg aaggtgggac                               1420

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<210> 7

<211> 1239

<212> DNA

<213> actinomycete

<220>

<221> misc\_feature

<222> (1)..(1217)

<223> "n" is unknown nucleotide

<400> 7

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gcttnttggg gggncnatgg cctaccaagg ngaggacggn tanccngcct gngagggaga      60
ccgnccacac tgggaatgng anacggccca gaatcctacg ggaggcagca nnggggaana     120
ttgcacaang ggcgaaagcc tgatgcagng angccgcgtg agggaagacg gcctttgggt     180
tgtaaacctn tttnagcagg gaagaagcga aagtgcgggt acctgcagaa gaagcgccgg     240

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- 7 -

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ctaantangt gccagcagcc gcgtaatan gtagggcgca agcgttgcc ggaattattg      300
ggcgtaaaga gcttgtaggc ggcttgctcan gtnggatgtg aaagcccggg gcttaacccc      360
ggggtttgcat ttgatacggg ctagctagag tgtggtaggg gagatnggaa ttcttggtgt      420
agcgggtgaaa tgcgcagata tcaggaggaa caccggtggc gaaggcggat ctctgggcca      480
ttactgacgc tgaggagcga aagcgtgggg agcgaacagg attagatacc ctggtagtcc      540
acgccgtaaa cggtgggaac taggtgttgg cgacattcca cgtcgtcggc gccgcagcta      600
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gggggcccgc acaagcagcg gagcatgtgg cttaattoga cgcaacgcga agaaccttac      720
caaggcttga catataccgg aaagcatcag agatgggtgcc ccccttggtg tcggtataca      780
ggtggtgcat ggctgtcgtc agctcgtgtc gtgagatgtt gggttaagtc ccgcaacgag      840
cgcaaccctt gttctgtgtt gccagcatgc ccttcggggg gatggggact cacaggagac      900
tggcgggggtc aactcggagg aagggtggga cgacgtcaag tcatcatgcc ctttatgtct      960
tggggctgca cacgtgctac aatggccggc acaatgagct gcgatgccgc gaggcggagc     1020
gaatctcaaa aagccggtct cagttcggat tgggggtctg naactcgacc ccatgaantc     1080
ggagttgcta ataatcccaa attcancatt ggtgcggtga atacttcccg ggcttggtac     1140
acnaccgccc gtcaactcac gaaagtcggt naaacccgaa accggtgggc caacccttg      1200
tggaaggaa ctggccnaag tgggactggc gattgggac      1239

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&lt;210&gt; 8

&lt;211&gt; 431

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(424)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 8

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ccgccttcgc caccggtgtt cctcctgata tctgcgcatt tcaccgctac accaggaatt      60
ccnatctccc ctaccacact ctagctagcc cgtatcaaat gcaaaccggg ggttaagccc      120
cgggctttca catccnacgt gacaagccgc ctacaanctc ttacgcccataaattccgg      180
acaacgcttg cgccctaent attaccgagg ctgctggcac ntatttagcc ggcgcttctt      240

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- 8 -

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ctgcagggtac cgtcactttc gctncttccc tgctgaaana ggtttacaac ccaaaggccn      300
tcatcoectcn ccggcntcnt tgcntcnggc ttncncccat tgttcaannt tccccactgc      360
tncctcccct cggaatctgg gccgntgtct cattcccntt ntggccggtc cccctcncag      420
gccngctacc c                                                    431

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&lt;210&gt; 9

&lt;211&gt; 653

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(640)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 9

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ctcagcgtn gtaatggccc aaaaaccgcc ttgccaccg gtgttccctcc tgatatctgc      60
gcatttcacc gctacaccag gaattccnat ctcccctacc aactctagc tagcccgat      120
cnaatgcaaa cccgggggta anccccgggc ttccacatcc nacntgacaa gccgcctaca      180
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nccattgtg caatatcccc cactgctgcc tcccgtagga ttctgggocg tntctcattc      420
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tccatgcggg anaaattggt ntccggtatt aaaccccggt tccagggnnt gtcccaaat      600
tgaagggggg attgnccaact ttttactcac ccgttcncn ctaatccacc acc          653

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&lt;210&gt; 10

&lt;211&gt; 1444

&lt;212&gt; DNA

&lt;213&gt; actinomycete



&lt;400&gt; 10

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acgaacgctg gcggcggtgct taacacatgc aagtcgaacg atgaagccgc ttcggtggtg      60
gattagtggc gaacgggtga gtaacacgtg ggcaatctgc ccttcactct gggacaagcc      120
ctggaaacgg ggtctaatac cggataacac tctgtcccgc atgggacggg gttgaaagct      180
ccggcggtga aggatgagcc cgcggcctat cagcttggtg gtggggtaat ggcctaccaa      240
ggcgacgacg ggtagccggc ctgagagggc gaccggccac actgggactg agacacggcc      300
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gaaagtgacg gtacctgcag aagaagcgcc ggctaactac gtgccagcag ccgcggtaat      480
acgtagggcg caagcgttgt ccggaattat tgggcgtaaa gagctcgtag gcggcttgct      540
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aacaccggtg gcgaaggcgg atctctgggc cattactgac gtctgaggag cgaaagcgtg      720
gggagcgaac aggattagat accctggtag tccacgccgt aaacgttggg aactaggtgt      780
tggcgacatt ccacgtcgtc ggtgccgcag ctaacgcatt aagttccccg cctggggagt      840
acggccgcaa ggctaaaact caaaggaatt gacggggggc cgcacaagca gcggagcatg      900
tggtttaatt cgacgcaacg cgaagaacct taccaaggct tgacatatac cggaagcat      960
cagagatggt gcccccttg tggtcggtat acagggtggtg catggctgtc gtcagctcgt      1020
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tgcccttcgg ggtgatggg actcacagga gactgccggg gtcaactcgg aggaaggtgg      1140
ggacgacgtc aagtcatcat gccccttatg tcttgggctg cacacgtgct acaatggccg      1200
gtacaatgag ctgcgatgcc gcgaggcgga gcgaatctca aaaagccggg ctgagttcgg      1260
attggggtct gcaactcgac cccatgaagt cggagttgct agtaatcgca gatcagcatt      1320
gctgcggtga atacgttccc gggccttgta cacaccgcc gtcacgtcac gaaagtcgg      1380
aacaccgaa gccggtggcc caacccttg gggagggagc tgtcgaagg gggactggcg      1440
attg

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- 10 -

<210> 11  
 <211> 503  
 <212> DNA  
 <213> actinomycete

<220>  
 <221> misc\_feature  
 <222> (1)..(499)  
 <223> "n" is unknown nucleotide

<400> 11  
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 cgggctttca caaccgacnt gacaagcgc ctacaanctc ttacncca ataattccgg 180  
 acaacgcttg cgcctacnt attaccggtg ctgctggcac ntatttagcc ggcgcttctt 240  
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 tcntccctca cgcggcgctg ctgcatcagg ctttcgcccc ttgtgcaata tccccactg 360  
 ctgcctcccg taggattctg ggccgtgtct cantcccant ntggccgggt ccctctcagg 420  
 ccgntaccc gtcgtccctt ggtgaaccnc tacctcncca acaanctgat agggcgcggtg 480  
 ctcanctgc acgccgganc ttt 503

<210> 12  
 <211> 1173  
 <212> DNA  
 <213> actinomycete

<220>  
 <221> misc\_feature  
 <222> (1)..(1144)  
 <223> "n" is unknown nucleotide

<400> 12  
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 agtaanangt gggcaatttg ccttcatctt tggacaagcc ctggaaacgg gtttaataacc 120  
 ggataacatt ttntcccgca tgggagggg ttgaaagntc cggcggtgaa ggatgagccc 180  
 gcggcctatn agcttggttg tggggtaatg gcctacccaa gggagacggg tagccggcct 240

- 11 -

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gagagggcga ccggccacac tgggaatgag anacggccca gaatcctacg ggaggcagca      300
gtggggaata ttgcacaatg ggcgaaagcc tgatgcagcg angccgcgtg agggatgacg      360
gccttnggggt tgtaaaccctt ttnnagcagg gaagaagcga aagtgcagggt acctgcagaa      420
gaagcgccgg ctaaataagt gccagcagcc gcggtaataa gtagggcgca agcgttgtcc      480
ggaattattg ggcgtaaaga gcttgtaggc ggcttgtcan gtnggatgtg aaagcccggg      540
gnttaacccc gggtttgcac ttgatacggg ctagntagag tgtggtaggg gagatnggaa      600
ttcctgggtg agcggtgaaa tgcgcagata tcaggaggaa caccggtggc gaaggcggat      660
ctctgggcca ttactgacgc tgaggagcga aagcgtgggg agcgaacagg attagatacc      720
ctggtagtcc acgccgtaaa cgttgggaac taggtgttgg cgacattcca cgtcgtcgggt      780
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agaaccttac caaggcttga catataccgg aaagcatcag agatgggtgcc ccccttgtgg      960
tcgntataca ngtggtgcat gnctgtcgtc acctcgtgtc gtgagatgtt gggttaagtc     1020
ccgcaacgag cgcnacccctt gntctgtgtt gncancatgc ccttcggggg tgatggggac     1080
tcacaggana ctgnccgggg tcaactccgg angaagggtg gtgacgaagt caaggtcatc     1140
atgncccctt atgtcttggt gctgcacacg tgc                                     1173

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&lt;210&gt; 13

&lt;211&gt; 1404

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(493)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 13

```

ttcggnggtg gantagnggc gnacgggnga ccaacangng ggcaatcccc cttcanttt      60
nggacaaccc ctggaaacgg gttntaatac cggataacan tttntccccg catggggangg      120
ggttgaaagc tccggcggtg aaggatgagc ccgcggccta tcagcttggt ggtggggtaa      180
tggcctacca aggcgacgac gggtagccgg cctgagaggg cgaccggcca cactgggant      240
gaganacggc ccagaatcct acgggaggca gcagtgggga atattgcaca atgggcgaaa      300

```

- 12 -

```

gcctgatgca ggcacgccgc gtgagggatg acggccttcg ggttgtaaac ctttttcagc      360
agggagaag cgaaagtgac ggtacctgca gaagaagcgc cggctaaata ngtgccagca      420
gccgcggtaa tangtagggc gcaagcgttg tccggaatta ttgggcgtaa agagnttgta      480
ggcggcttgt cangtcggat gtgaaagccc ggggcttaac cccgggtttg cattcgatac      540
gggctagcta gagtggtgta ggggagatcg gaattcctgg tgtagcgggtg aaatgcgcag      600
atatcaggag gaacaccggt ggcgaaggcg gatctctggg ccattactga cgctgaggag      660
cgaaagcgtg gggagcgaac aggaattaga taccctggta gtccacgccg taaacgttgg      720
gaactaggtg ttggcgacat tccacgtcgt cggtgccgca gctaacgcat taagttcccc      780
gcctggggag tacggcccg c aaggctaaaa ctcaaaggaa ttgacggggg cccgcacaag      840
cagcggagca tgtggcttaa ttcgacgcaa cgcaagaac cttaccaagg cttgacatat      900
accggaaaagc atcagagatg gtgccccct tgtggtcggt atacagggtg tgcattggctg      960
tcgtcagctc gtgtcgtgag atgttgggtt aagtcccgca acgagcgcaa cccttggttc     1020
tgtgttggcc agcatgccct tcggggtgat ggggactcac aggagactgg ccgggggtcaa     1080
ctcggaggaa ggtggggacg acgtcaagtc atcatgcccc ttatgtcttg gggctgcaca     1140
cgtgctacaa tggccggtac aatgagctgc gatgccgcga aggcggagcg aatctcaaaa     1200
aagccggtct cagttcggat tggggtctgc aactcgaccc catgaagtcg gagttgctag     1260
taatcgaga tcagcattgc tgcggtgaat acgttcccg gcttgtaca caccgcccgt     1320
cacgtcacga aagtcggtaa caccgaagc cgggtggtcca accccttggt ggagggagct     1380
gtcgaagggtg ggactggcga ttgg                                     1404

```

&lt;210&gt; 14

&lt;211&gt; 1411

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(1411)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 14

```

aacacatgca agtcgaacga tgaagccgct tcggtggtgg attagtggcg aacgggtgag      60
taacacgtgg ccaantgtgn ccgtcactat gggacgaaga ccttggaaac ggggtctaata     120

```

- 13 -

accggataac actctgtccc gcatgggacg gggttgaaag ctccggcggt gaaggatgag 180  
cccgcggcct atcagcttgt tggtggggta atggcctacc aaggcgacga cgggtagccg 240  
gcctgagagg gcgaccggcc aactgggac tgagacacgg ccagactcc tacgggaggc 300  
agcagtgggg aatattgcac aatgggcgaa agcctgatgc agcgacgccg cgtgagggat 360  
gacggccttc gggttgtaaa cctctttcag cagggaagaa gcgaaagtga cggtagctgc 420  
agaagaagcg ccggctaact acgtgccagc agccgcggta atacgtaggg cgcaagcgtt 480  
gtccggaatt attgggcgta aagagctcgt aggcggcttg tcacgtcga tgtgaaagcc 540  
cggggcttaa ccccggtct gcattcgata cgggctagct agagtgtggt aggggagatc 600  
ggaattcctg gtgtagcggg gaaatgcgca gatattcagg aggaacaccg gtggcgaagg 660  
cggatctctg ggccattact gacgctgagg agcgaaagcg tggggagcga acaggattat 720  
ataccctggt agtccacgcc gtaaacgttg ggaactaggt gttggcgaca ttccacgtcg 780  
tcggtgccgc agctaacgca ttaagttccc cgctgggga gtacggccgc aaggctaaaa 840  
ctcaaaggaa ttgacggggg ccgcacaaag cagcggagca tgtggcttaa ttcgacgcaa 900  
cgcaagaac cttaccaagg cttgacatat accggaaagc atcagagatg gtgccccct 960  
tgtggtcggg atacaggtgg tgcattggctg tcgtcanctc gtgtcgtgag atgttgggtt 1020  
aagtcccgc aagagcgcaa cccttgttct gtgttgccag catgcccttc ggggtgatgg 1080  
ggactcacag gagactgccg gggtaactc ggaggaaggt ggggacgacg tcaagtcac 1140  
atgcccctta tgtcttgggc tgcacacgtg ctacaatggc cgctacaatg acctgcgatg 1200  
ccgcgaggcg gaccgaatct caaacaagcc cgtctcattc ggattgcggg ctgcaactcc 1260  
gaccccatga agtccgactt gctagtactc gcacgtcaac attgctgcgc tgaatacgtc 1320  
ccggggcctt gtacacaccg ccgctcacgt cagcaaagtc ggtaacaccc gaagccgggtg 1380  
gnccaacccc ttgtgggagg gagctgtcga a 1411

&lt;210&gt; 15

&lt;211&gt; 562

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt; .

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(547)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 15

```

ccgccttcgc caccggtggt cctcctgata tctgcgcatt tcaccgctac accaggaatt      60
ccnatctccc ctaccacact ctagctancc cgtatcnaat gcaaaccggt ggtaaccgc      120
cgggctttca caccnacnt nacaanccgc ctacaaactc tttagccca ataattccgg      180
acaacgcttg cgccctactt attaccggtg ctgctggcac ttatttagcc ggcgcttctt      240
ctgcaggtag cgtcactttc gcttcttccc tgctgaaaaa ggtttacaac ccgaaggcng      300
tcattccctca cgccggtctg ctgcatcagg ctttcgcccc ttgtgcaata tccccactg      360
ctgcctcccg tagnantctg ggccgtntct cantcccggt gtggnccgtc gccctctcag      420
gccggtacc cgtcgtcncc tnggtnaacc attanctcac caacaagctg ataggccggt      480
ggctcatcct tcaccgcccg agcttttaac ccctgcccac gaaaacagan gtnttatccg      540
gtattanaac ccgtttccag gg                                          562

```

&lt;210&gt; 16

&lt;211&gt; 1390

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(1362)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 16

```

atgcaagtgc agcggaaagg cccttcgggg tactcgagcg gcgaacgggt gagtaacacg      60
tgagttaatc tgccccaggc tctggatacc caccggaaaa cggtgattaa taccgaatac      120
gacaaccgat ttgcatgata tgggtggtgna aagtttttcg gcctgggatg tgcttcgcgg      180
cctatcagct tgttggtgag gtaatggctc acccaaggct tcgacggtag ccggcctgag      240
agggtgaccg nccacactgg gactgagaca cggcccagac tcctacggga ggcagcagtg      300
gggaatatgt gacaatgggc ggaagcctga tccagcaacg ccgcgtgagg gatgacggcc      360
ttcgggttgt aaacctcttt cagcacagac gaagcgcaag tgacgggtatg tgcagaagaa      420
ggaccggcca actacgtgcc agcagccggt gtaatacgtg ggggccgagc gttgtccgga      480
attattgggc gtaaagggtc cgtaggcggt ctgtcgcgtc gggagtgaac accaggtgct      540

```

```

taacacctgg cctgctttcg atacgggcag nctagaggta cncaggggag aatggaattc      600
ctggtgtage ggtgaaatgc gcagatatca ggaggaaaca ccggtggcga agncggttct      660
ctgggagtat cctgacgctg aggagcgaaa gtgtggggag cgaacaggat tagataccct      720
ggtagtccac accgtaaacg ttgggcgcta ggtgtgggac acattccacg tgttccgtgc      780
cgcagctaac gcattaancg ccccgcttgg ggagtacggc cgcaangcta aaactcanag      840
gaattgacgg gggcccgcac aagcggcgga gcatgcggat taattcgatg caacgcgaag      900
aaccttacct gggtttgaca tacaccgga agccgtacag atacggcccc ttttagtcgg      960
tgtacagggtg gtgcatggct gtcgtcagct cgctgtcgtg agatgttcgg gttaagtccc     1020
gcaacgagcg caaccctcgt cctatgttgc cagcaattcg gttggggact cataggagac     1080
tgccggggtc aactcggagg aaggtgggga tgacgtcaag tcatcatgcc cttatgtcc      1140
agggcttcac gcatgctaca atggccggta caaagggtg cgatcccgtg agggtgagcg      1200
aatcccaaaa agccggtctc agttcggatt ggggtctgca actcgacccc atgaagtcgg      1260
agtcgctagt aatcgagat cagcaacgct gcggtgaata cgttcccggg cttgtacac      1320
accgcccgtc acgtcacgaa agtcggcaac acccgaagcc antggcccaa ctcgtaagag      1380
agggagctgt                                     1390

```

<210> 17

<211> 1411

<212> DNA

<213> actinomycete

<220>

<221> misc\_feature

<222> (1)..(638)

<223> "n" is unknown nucleotide

<400> 17

```

gtgcttaaca catgcaagtc gaacgatgaa gccgcttcgg tgggtggatta gtggcgaacg      60
ggtgagtaac acgtgggcaa tctgcccttc actctgggac aagccctgga aacgggggtct      120
aataccggat aacactctgt cccgcatggg acgggggttga aagctccggc ggtgaaggat      180
gagcccgcg cctatcagct tgttggtggg taatggccta ccaaggcgac gacgggtagc      240
cggcctgaga gggcgaccgg ccacactggg actgagacac ggcccagact cctacggggag      300
gcagcagtgg ggaatattgc acaatgggcg aaagcctgat gcagcgacgc cgcgtagagg      360

```

- 16 -

```

atgacggcct tcgggttgta aacctctttc agcaggggaag aagcgaaagt gacggtacct      420
gcagaagaag cgccgggctaa ctacgtgcca gcagccgcgg taatacgtag ggcgcaagcg      480
ttgtccggaa ttattgggcg taaagagctc gtagggcggt tgtcacgtcg gatgtgaaag      540
cccggggctt aaccccggtt ctgcattcga tacgggctag ctagagtgtg gtaggggaga      600
tcggaattcc tgggtgtagcg gtgaaatgcg cagatatnca ggaggaacac cggtggcgaa      660
ggcggatctc tggccattac tgacgtgag gagcgaaagc gtggggagcg aacaggatta      720
gataccctgg tagtccacgc cgtaaactgt ggggaactagg tgttggcgac attccacgtc      780
gtcgggtgccg cagctgaacg cattaagttc cccgcctggg gagtacggcc gcaaggctaa      840
aactcaaagg aattgacggg ggcccgaca agcagcggag catgtggctt aattcgacgc      900
aacgcgaaga accttaccaa ggcttgacat ataccggaaa gcatcagaga tggtgccccc      960
cttgtggtcg gtatacaggt ggtgcatggc tgtcgtcagc tcgtgtcgtg agatgttggg     1020
ttaagtcccg caacgagcgc aacccttggt ctgtgttgcc agcatgccct tcggggtgat     1080
ggggactcac aggagactgc cggggtcaac tcggaggaag gtggggacga cgtcaagtca     1140
tcatgcccct tatgtcttgg gctgcacacg tgctacaatg gccggtacaa tgagctgcga     1200
tgccgcgagg cggagcgaat ctcaaaaagc cgggtctcagt tcggattggg gtctgcaact     1260
cgaccccatg aagtcggagt tgctagtaat cgcagatcag cattgctgcg gtgaatacgt     1320
tcccgggcct tgtacacacc gccgtcacgt cacgaaagtc ggtaacaccc gaagccggtg     1380
gcccaaccgc cttgtgggag ggaactttcc a                                     1411

```

&lt;210&gt; 18

&lt;211&gt; 1370

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1) .. (1367)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 18

```

atgcaagtng aacgatgaan ctttttgggg tggattagt gcaacgggt gagtaanang      60
tgggcaattt gcccttcaat ttgggacaag ccctggaaac ggggtntaat accggataac     120
antntgtccc gcatgggacg ggggttaaaag ctccggcgggt gaaggatgag cccgcggcct     180
atnagcttgt tgggtggggtg atggcctacc aaggcgacga cgggtagccg gcctgagagg     240

```



- 17 -

```

gcgaccggcc acactgggac tgagacacgg cccagactcc tacgggaggc agcagtgggg 300
aatattgcac aatgggcgaa agcctgatgc agcgacgccg cgtgagggat gacggccttc 360
gggttgtaaa cctttttcag caggaagaa gcgaaagtga cggtaacctgc agaagaagcg 420
ccggctaaat angtgccagc agccgcggta atangtaggg cgcaagcggt gtccggaatt 480
attgggcgta aagagtttgt aggcggcttg tcacgtngga tgtgaaagcc cggggcttaa 540
ccccgggttt gcattcgata cgggctagct agagtgtggt aggggagatc ggaattcctg 600
gtgtagcggg gaaatgcgca gatatcagga ggaacaccgg tggcgaaggc ggatctctgg 660
gccattactg acngtgagga gcgaaagcgt ggggagcnaa cagnattaga taccctggta 720
gtccaagccg taaacgttgg gaactangtg ttggcgacat tccacgtcgt cnntgccgca 780
nctaacgcat taagttcccc gcctggggag tacggccgca aggctaanac tcaaaggaat 840
tgangnnggc ccgcacaagc agcggagcat gtggcttant tcnacgcanc gcgaagaacc 900
ttaccaaggt ttgcatata ccgaaagca tcagagatgg tgccccctt gtggtcggta 960
tacaggtggt gcntggctgt cgtcagctcg tgtcgtgaca tgttggttaa gtcccgtaaa 1020
cgaggcgcaa ccottgttnt gtgtngccag catgcccttc ggggtgatgg ggactcacag 1080
gagactgccg ggggtcaactc ggaggaaggt ggggacgacg tcaagtcac atgcccccta 1140
tgtcttgggc tgcacacgtg ctacaatggc cgttacaatg agctgogatg ccgcgagggc 1200
gagcgaatct caaaaagccg gtntcagttc ggattggggg ctgcaactcg accccatgaa 1260
gtcggagttg ctagtaatcg cagatcagca ttgctgcggg gaatacgttc ccgggccttg 1320
tacacaccgc ccgtcacgtc acgaaagtcg gtaacaccgc aagccgntgg 1370

```

&lt;210&gt; 19

&lt;211&gt; 1162

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(1156)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 19

```

gaacgatgaa gccgtttcgg tgggtggatta gtggcgaacg gtgagtaaaa gtggcaattt 60
ncccttcatt ttggacaagc cctggaaacg ggtttaanac cggataacat tntgtccgc 120

```

```

atgggacggg gttgaaagnt cccggcggtg aaggatgagc ccgcggcnta tcagcttggt 180
ggtggggtaa tggcctacca aggcgacgac gggtagcccg cctgagaggg cgaccggcca 240
cactgggant gagacacggc ccagactcct acgggaggca gcagtgggga atattgcaca 300
atgggcgaaa gcctgatgca gcgacgccgc gtgagggatg acggccttcg gggtgtaaac 360
ctntttcagc agggaagaag cgaaagtac ggtacctgca gaagaagcgc cggctaaata 420
ngtgccagca gccgcggtaa tangtagggc gcaagcggtg tccggaatta ttgggcgtaa 480
agagcttgta ggcggcttgt cangtcggat gtgaaagccc ggggcttaac cccgggtttg 540
cattcgatac gggctagtta gagtgtggta ggggagatng gaattcctgg tgtagcggtg 600
aaatgcgcag atatcaggag gaacaccggt ggcgaaggcg gatctctggg ccattactga 660
cgctgaggag cgaaagcgtg gggagcnaac aggattagat accctggtag tccacgccgt 720
aaacgttggg aactaggtgt tggcgacatt ccacgtcgtc ggtgccgcag ctaacgcatt 780
aagttccccg cctggggagt acggccgcaa ggctaaaact caaaggaatt gacggggggc 840
cgcacaaagca gcggagcatg tggcttaatt cgacgcaacg cgaacaacct taccaaggct 900
tgacatatac cggaagcat canagatggt gcccccttg tggtcggtat acangtggtg 960
catggctgtc gtcagctcgt gtcgtgagat gttgggttan gtcccgcaac gagcgcnacc 1020
cttgttctgt gtcgncnagc atgcccttcg nggtgatggg gactcacang agactgncgg 1080
ggtccactcg gaggaagggt ggcacnacgt canntcatca tgccccctta tgtcttgggn 1140
ctggccacgt gcnacnatgg cc 1162

```

<210> 20

<211> 1411

<212> DNA

<213> actinomycete

<220>

<221> misc\_feature

<222> (1)..(1404)

<223> "n" is unknown nucleotide

<400> 20

```

gctggcgggc tgottaacac atgcaagtcg aacgatgaag ccgcttcggt ggtggattag 60
tggcgaacgg gtgagtaaca cgtgggcaat ctgcccttca ctctgggaca agccctggaa 120
acgggggtcta ataccggata aactctgtc ccgcatggga cgggggttgaa agctccggcg 180

```

- 19 -

```

gtgaaggatg agcccgcggc ctatcagctt gttggtgggg taatggccta ccaaggcgac      240
gacgggtagc cggcctgaga gggcgaccgg ccacactggg actgagacac ggcccagact      300
cctacgggag gcagcagtgg ggaatattgc acaatgggcg aaagcctgat gcagcgacgc      360
cgcgtagagg atgacggcct tcgggttgta aacctctttc agcagggaaag aagcgaaagt      420
gacggtacct gcagaagaag cgccggctaa ctacgtgcc a gcagccgcg taatacgtag      480
ggcgcaagcg ttgtccggaa ttattgggcg taaagagctc gtagggcggt tgtcacgtcg      540
gatgtgaaag cccgggggctt aaccccgggg ctgcattcga tacgggctag ctagagtgtg      600
gtaggggaga tcggaattcc tgggtgtagcg gtgaaatgcg cagatatcag gaggaacacc      660
ggtggggaag gcggatctct gggccattac tgacgctgag gagcgaaagc gtggggagcg      720
aacaggatta gataccctgg tagtccaagc cgtaaactgt gggaactang tgttggcgac      780
attccacgtc gtcgggtgcc cagctaacgc attaagttcc ccgtcctggg gagtacggcc      840
gcnaggctaa aactcaaagg aattgacggg ggcccgacac agcagcgag catgtggctt      900
anttcgacgc nacgcgaaga acctnccaa ggctgacata taccggaag catcacagat      960
ggtgcccccc ttgtggtcgg tatacagggg ggtgcatggc tgttcgtcag ctcggtgtcg      1020
gagatgttgg gttaagtccc gcaaagagcg caaccgtgtt ctgtgttgcc agcatgccct      1080
tcggggtgat ggggactcac acgagactgt cngggtaaac tcggaggaag gtggggacga      1140
cgtcaagttc atcatgcccc ttatgtcttg ggctgcacac gngctacaat ggccggtaca      1200
atgagnnggg atgccgcgag gcggagcgaa tctcaaaaag ccggtctcag ttcggtattg      1260
ggtctgcaac tgaccccatg aagtcggagt tgctagtaat cgcagatcag cattgctgcg      1320
gtgaatacgt ncccgggcct ngtaacacac acccgtcacg tcacgaaagt cggtaacacc      1380
ctaagccggt gncccaaccc cttntgggag g                                     1411

```

&lt;210&gt; 21

&lt;211&gt; 549

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(431)

&lt;223&gt; "n" is unknown nucleotide

<400> 21  
 ccaganatcc gccttcgcca ccggtgttcc tcctgatata tgcgcatcttc accgctacac 60  
 caggaattcc gatctcccct accacactct agctagcccg tatcgaatgc agaccggggg 120  
 ttaagccccg ggctttcaca tccgacgtga caagccgcct acgagctctt tacgcccatt 180  
 aattccggac aacgcttgcg ccctacgtat taccgcggt gctggcacgt agttagccgg 240  
 cgctttcttct gcaggtagcg tcaatttcgc ttcttccctg ctgaaagagg ttacaacccc 300  
 gaaggncgtc atccctcacg cggcgctcgt gcatcaggct ttgccccatt gtgcaatatt 360  
 cccactgct gcctcccgtg ggagtctggg ncgtgttcaa tnccagtggg gggccggtcg 420  
 ccctctcagg ncggctaccg tcgtcgcctt ggtaggcatt accacaacaa gctgataggc 480  
 ggggggtcatc cttcaacgcc ggagcttcaa acccggtccat gcgggacaag tgtatccggg 540  
 attaaacccc 549

<210> 22  
 <211> 672  
 <212> DNA  
 <213> actinomycete  
 <220>  
 <221> misc\_feature  
 <222> (1)..(643)  
 <223> "n" is unknown nucleotide

<400> 22  
 tcagtnatgg ccagagaanga tccgncttcg ccaccgggtgt tcctcctgat atctgcgcat 60  
 ttcaccgcta caccaggaat tccgatctcc cctaccacac tctaactagc ccgtatcgaa 120  
 tgcagacccc gggttaagcc ccgggctttc acatccgacg tgacaagccg cctacgagct 180  
 cttnacgccc aataattccg gacaacgctt gcgcctacg tattaccgcg gctgctggca 240  
 cgtagttagc cggcgcttct tctgcaggta ccgtnacttt cgcttcttcc ctgctgaaag 300  
 aggtttacaa cccgaaggcc gtctccctc acggggcgtc gctgcatcag gctttcgccc 360  
 atngtgcant attccccact gntgnctccc gtangagtct gggccgtgtc tcagtcccag 420  
 tgtggccggg cgncctctca ggccggctac cgtcgtcgcc ttggtaggnc attaccaccc 480  
 aacaagctga tangtcgngg gctcatcctt caccgncgga gntttaaccc cgtncatgcg 540  
 ggacagagtg ttatccggta ttanaccgt atncagggtg tgtcccatag tgaagggnag 600

- 21 -

atngccacgt gttatcaccg ttcgncacta atnatcanog aancggcttc atcggttcgac 660  
ttgcatgtgt ta 672

&lt;210&gt; 23

&lt;211&gt; 678

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(648).

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 23

ctcagcgtca gtcattggcca agagatccgc cttcgccacc ggtgttcctc ctgtatatct 60  
gcgcatttca ccgctacacc aggaattccg atctccccta ccacactcta gctagcccgt 120  
atcgaatgca gacccgggggt taagccccgg gctttcacat ccgacgtgac aagccgccta 180  
cgagctcttt acgcccaata attccggaca acgcttgccg cctacgtatt accgcggctg 240  
ctggcacgta gtttagccggc gcttcttctg caggtaccgt cactttcgct tcttccctgc 300  
tgaaagaggt ttacaacccg aaggccgtca tccctcacgc ggctcgctg catcaggctt 360  
tcgcccattg tgcaatatcc cccactgctg cctcccgtag gactctgggc cgtgtctcag 420  
tcccagtggt gccggctgcc ctctcaggcc ggctaccgt cgtcgccctt gtagggcatt 480  
accaccaac aagctgatag gccgcgggct catccttcan cgcgcggagct ttaacccgtc 540  
catgcgggac agagtgttat ccggtattaa acccgtttca gggcttgtcc canagtgaag 600  
ggcagattgc cactgttat canccgttcg ncactaatca cancgaancg ggttcacgt 660  
tcgacttgca tgtgttaa 678

&lt;210&gt; 24

&lt;211&gt; 688

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

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&lt;222&gt; (1)..(666)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 24

```
ggcccagana tccgncttcg ccaccggtgt tctctctgaa tatctgcgca tttcaccgct      60
acaccaggaa ttccgatctc ccctaccaca ctctaactag cccgtatcga atgcagaccc      120
ggggttaagc cccgggcttt cacatccgac gtgacaagcc gcctacgagc tctttacgcc      180
caataattcc ggacaacgct tgcgccctac gtattaccgc ggctgctggc acgtaattag      240
ccggcgcttc ttctgcaggt accgtcactt tcgcttcttc cctgctgaaa gaggtttaca      300
acccgaaggc cgtcatccct cagcgggcgt cgctgcatca ggctttcgcc cattgtgcaa      360
tattccccac tgetgnetcc cgtangagtc tgggccgtgt ctcagtccca gtgtggccgg      420
tcgncctctc aggcgggcta ccgtcgtcgc cttggtaggc cattaccca ccaacaagct      480
gatangccgn gggctcatcc ttcanegtcg gagctttcaa nccgtccat gcgggacaga      540
gtgttatccg gtattanacc ccgtntcagg gcttgtccan agtgaagggc agatngccac      600
gtgttatcac cgttcgccac taatnacanc gaaacggctt atcgtncgac tgcattgtgt      660
aacacncgca gcgttcgtcc tgagccag                                         688
```

&lt;210&gt; 25

&lt;211&gt; 702

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(658)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 25

```
ccctcagggc cagtaatggg ccagagatc cgccttcgcc accggtgttc ctctgaata      60
tctgcgcatt tcaccgctac accaggaatt ccgatctccc ctaccacact ctagctagcc      120
cgtatcgaat gcagaccggg ggttaagccc cgggctttca catccgacgt gacaagccgc      180
ctacgagctc tttacgccca ataattccgg acaacgcttg cgccctacgt attaccggcg      240
ctgctggcac gtagttagcc ggcgcttctt ctgcaggtag cgctactttc gcttcttccc      300
tgctgaaaga ggtttacaac ccgaaggccg tcatccctca cgcggcgctc ctgcatcagg      360
```

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```

ctttcgccca ttgtgcaata ttccccactg ctgcctcccg taggagtctg ggccgtgtct      420
cagtcccagt gtggccggtc gccctctcag gccggctanc cgtcgtcgcc ttgggtaggc      480
attancccan caacaagctg ataggncgcg ggctcatnct tcaacgccgg agctttcaan      540
cccgcccatg cgggacagag tgttatncgg tattaacccc gtttcagggc ttgttcagga      600
gtgaagggca gattgccacg tgttatcaac cgttcggcac taatcacaac gaagcggntt      660
atcggtcgac ttgcatgtgt taacaagccg ccagcgttcg tc                          702

```

&lt;210&gt; 26

&lt;211&gt; 711

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(687)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 26

```

tcagtaatgg ccagagatc cgccttcgcc accggtgttc ctccctggata tctgcgcatt      60
tcaccgctac accaggaatt ccgatctccc ctaccacact ctagctagcc cgtatcgaat      120
gcagaccggg ggttaagccc cgggctttca catccgacgt gacaagccgc ctacgagctc      180
tttacgcccc ataattccgg acaacgcttg cgccctacgt attaccgagg ctgctggcac      240
gtagttagcc ggcgcttctt ctgcaggtag cgtcactttc gcttcttccc tgctgaaaga      300
ggtttacaac ccgaaggccg tcatccctca cgcggcgtcg ctgcatcagg ctttcgcccc      360
ttgtgcaata ttccccactg ctgcctcccg taggagtctg ggccgtgtct cagtcccagt      420
gtggccggtc gccctctcag gccggctacc cgtcgtcgcc ttggtaggcc attacccac      480
caacaagctg ataggccgcg ggctcatcct tcaccgncgg agctttaacc ccgtcccatg      540
cgggacagag tgttatccgg tattagaacc cgtttcaggg gcttgtccca gagtgaaggg      600
cagattgcca cgtgttaact anccgttcgn cactaatcan caacgaagcg gcttcatcgt      660
tcgacttgca tgtgttaagc acgccgncag cgttcgtcct gagccaggat c                          711

```

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<210> 27  
 <211> 522  
 <212> DNA  
 <213> actinomycete

<220>  
 <221> misc\_feature  
 <222> (1)..(465)  
 <223> "n" is unknown nucleotide

<400> 27  
 tcagtatcng cccagagatc cgccttcgcc accggtgttt cctcctgata tctgcgcatt 60  
 tcaccgctac accaggaatt ccgatctccc ctaccgaact ctagcctgcc cgtatcgact 120  
 gcagacccgg ggtaagccc cgggctttca caaccgacgt gacaagccgc ctacgagctc 180  
 tttagccca ataattccgg acaacgcttg cgcctacgt attaccgagg ctgctggcac 240  
 gtagttagcc ggcgcttctt ctgcaggtag cgtaactttc gcttcttccc tgctgaaaga 300  
 ggtttataaa ccgaaggccg tcatccotca cgcggcgtag ctgcatcagg ctttcgcccc 360  
 ttgtgcaata ttccccactg gtgnetcccg tangagtctg gggcggtgtc cantccagtg 420  
 tgggcggtag cctctcaggg cggctacgt cgtagcttgg tgagnacta ctcaacaaca 480  
 gctgataggc gcgggctcat ctggaacggc ggagctttac ac 522

<210> 28  
 <211> 670  
 <212> DNA  
 <213> actinomycete

<220>  
 <221> misc\_feature  
 <222> (1)..(638)  
 <223> "n" is unknown nucleotide

<400> 28  
 tcagtaatgg cccaganatc cgncttcgcc accggtgttc ctctgatata ctgcgcattt 60  
 caccgctaca ccaggaattc cgatctcccc taccacaact taactagccc gtatcgaatg 120  
 cagacccggg gttaagcccc gggctttcac atccgacgtg acaagccgcc tacgagctct 180  
 ttacgcccac taattccgga caacgcttgc gccctacgta ttaccgaggc tgctggcacg 240



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```

tagttagccg gcgtttcttc tgcaggtacc gtcactttcg cttcttccct gctgaaagag   300
gtttacaacc cgaaggccgt catccctcac gggcgctcgc tgcacaggc tttcgcccat   360
tgtgcaatat tccccactgc tgcttccgt angagtctgg gccgtgtctc agtcccagtg   420
tggccggtcg ccctctcagg ccggctaccg tcgtcgctt ggtaggccat taccaccaa   480
caagctgata ngncgngggc tcctcttca ccgncggagc tttcaanccc gtcccatgcg   540
ggacagagtg ttatccgga ttaaaccgt ntccagggt tgtccatagt gaagggcaga   600
ttgccaagtg ttatcancg ttcgncacta atcatcancg aagcggcttc atcggtcgac   660
tgcattgttt                                     670

```

&lt;210&gt; 29

&lt;211&gt; 676

&lt;212&gt; DNA

&lt;213&gt; actinomycete

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(666)

&lt;223&gt; "n" is unknown nucleotide

&lt;400&gt; 29

```

tcctcagnat cagtaatggc ccagagatcc gccttcgcc aagggtgttc tcctgatata   60
tgcgcatctc accgctacac caggaattcc gatctccct accacactct anctagcccg   120
tatcgaatgc agaccgggg ttaagcccc ggctttcaca tccgangtga caagccgcct   180
acgagctctt tacgccaat aattccggac aangcttgc cctacgtat taccgcgnt   240
gctggcacgt agttagccg cgtttctct gcaggtaccg tcactttcgc ttcttccctg   300
ctgaaagagg tttaacaacc gaaggccgtc atccctcacn cggcgctcgt gcatcaggct   360
ttcgccatt gtgcaatatt cccactgt gcctcccgta ggagtctgg cgtgtotca   420
atcccantgt ggccggtcgc cctctcangc cggctaccgt cgtcgcttg taggccatta   480
ccccaccaac aagctggata ggcggggggc tcattcttca ccgccgaag ctttaanccc   540
gtccatgcgg gananagtgn atcccngtat taaaccngt ttcagggtt gtccanagtg   600
aagggngatt gccnagtgt ttatncccc ttcgccanta atcnacaac aaagcgntt   660
cntcgnttcg acttgc                                     676

```

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<210> 30  
 <211> 626  
 <212> DNA  
 <213> actinomycete

<220>  
 <221> misc\_feature  
 <222> (1)..(618)  
 <223> "n" is unknown nucleotide

<400> 30  
 taatggccca gaanatccgc cttegccacc ggtgttcctc ctgaatatct ggcgatttca 60  
 ccgctacacc aggaattccg atctccccta ccacactcta gctagcccggt atcgaatgca 120  
 gacccgggggt taagccccgg gctttcacat ccgacgtgac aagccgccta cgagctcttt 180  
 acgccaata attccggaca acgcttgcg cctacgtatt accgcggctg ctggcacgta 240  
 gttagccggc gcttcttctg caggtaccgt cactttcgct tcttccctgc tgaaagaggt 300  
 ttacaaccog aaggccgtca tccctcacgc ggcgtcgctg catcaggctt tcgcccattg 360  
 tgcaatatte cccactgctg cctcccgtag gagtctgggc cgtgtctcag tcccagtgtg 420  
 gcggctcgcc tctcaggccg gntanccgtc gtcgccttgg tangccatta ncccaccaac 480  
 aagctgatan gccgnngggt catccttcan cgccggagct ttttaaccccg tcccatgcgg 540  
 gacagagtgt tatccggtat tagatcccg ntccagggt tgtncatagt gaagggcana 600  
 ttgccacgtg ttactcance gttcgc 626

<210> 31  
 <211> 20  
 <212> DNA  
 <213> primer

<400> 31  
 agagtttgat cmtggctcag

20

- 27 -

&lt;210&gt; 32

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; primer

&lt;400&gt; 32

ctgtttgctc cccacgcttt c

21

&lt;210&gt; 33

&lt;211&gt; 22

&lt;212&gt; DNA

&lt;213&gt; primer

&lt;400&gt; 33

tacggytacc ttgttacgac tt

22